

A STUDY OF THE IMPACT OF RAISING THE MINIMUM WAGE IN SOUTH DAKOTA: 2007 UPDATE

By

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INTRODUCTION

This report represents an update of a report prepared for Governor Michael Rounds in January 2006. At that time, Governor Rounds had proposed an increase in the minimum wage in South Dakota from \$5.15 per hour to \$6.00 per hour starting July 1, 2006. That bill did not pass the Legislature. This year, 2007, Governor Rounds has proposed an increase in the minimum wage that would mirror the minimum wage bill that passed the U.S. House of Representatives in January of 2007. This minimum wage bill would increase the current minimum wage of \$5.15 per hour to \$7.25 per hour in three seventy cent increments. The first increase would be to \$5.85 per hour within 60 days of the enactment of the bill, to \$6.55 per hour one year later (2008), and to \$7.25 per hour one year later (2009).

The current minimum wage in South Dakota is \$5.15 per hour and has been at this level since 1997. Prices increased by 26 percent between 1997 and 2006, and this reduced the real minimum wage to \$4.10 in 2006 purchasing power. Governor Rounds' new proposal would raise the South Dakota minimum wage from \$5.15 per hour to \$7.25 per hour following the Federal law timetable.

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An increase in the minimum wage is often controversial with both sides providing arguments supporting their position.

Proponents argue that a higher minimum wage will:

1. directly benefit low-wage workers by increasing their income,
2. reduce poverty,
3. stimulate the economy by increasing the purchasing power of low-wage workers,
4. provide greater equity and fairness.

Opponents of a higher minimum wage argue that it will:

1. reduce employment by pricing some low-skill workers out of the labor market,
2. raise barriers to people with little or no work experience to find the initial job that would provide experience and on-the-job training that would allow them to earn higher wages,
3. increase the cost of labor to businesses,
4. lead to higher prices as businesses attempt to cover higher costs through higher prices.

The purpose of this paper is to study the probable impacts of a higher minimum wage in South Dakota. Both benefits and costs of a higher minimum wage will be studied and quantified. As in all policy changes, there is the matter of *tradeoffs* where there are *benefits and costs* of the new policy. It is the intent of this study to provide policymakers with information about the benefits and costs of a higher minimum wage in South Dakota.

WHO WORKS AT THE MINIMUM WAGE RATE?

The Fair Labor Standards Act establishes the federal minimum wage and overtime pay affecting full-time and part-time workers in the private sector and in Federal, State, and local governments. The federal minimum wage was first set at \$0.25 per hour in 1938. Over the years it has been increased and since September, 1997 it has been \$5.15 per hour. The South Dakota minimum wage has also been \$5.15 per hour since 1997.

I. COVERAGE

According to the U.S. Department of Labor, there are two ways that an employee can be covered by the law: enterprise coverage or individual coverage. Covered enterprises include:

Employees who work for certain businesses or organizations (or "enterprises") are covered by the FLSA. These enterprises, which must have at least two employees, are:

- (1) those which do at least \$500,000 a year in business
- (2) hospitals, businesses providing medical or nursing care for residents, schools and preschools, and government agencies.¹

Individual coverage includes:

Even when there is no enterprise coverage, employees are protected by the FLSA if their work regularly involves them in commerce between States ("interstate commerce"). In its own words, the law covers individual workers who are "engaged in commerce or in the production of goods for commerce."

Examples of employees who are involved in interstate commerce include those who: produce goods (such as a worker assembling components in a factory or a secretary typing letters in an office) that will be sent out of state, regularly make telephone calls to persons located in other States, handle records of interstate transactions, travel to other States on their jobs, and do janitorial work in buildings where goods are produced for shipment outside the State.

Also, domestic service workers (such as housekeepers, full-time babysitters, and cooks) are normally covered by the law.²

¹ <http://www.dol.gov/esa/regs/compliance/whd/whdfs14.htm>

II. WORKERS RECEIVING TIPS

Workers receiving tips are also covered by the minimum wage. According to the Labor Department:

An employer of a tipped employee is only required to pay \$2.13 an hour in direct wages if that amount plus the tips received equals at least the federal minimum wage, the employee retains all tips and the employee customarily and regularly receives more than \$30 a month in tips. If an employee's tips combined with the employer's direct wages of at least \$2.13 an hour do not equal the federal minimum hourly wage, the employer must make up the difference.

Some states have minimum wage laws specific to tipped employees. When an employee is subject to both the federal and state wage laws, the employee is entitled to the provisions of each law which provide the greater benefits.³

III. THE DATA

The three different levels of the proposed new minimum wage as phased-in are:

1. \$5.85 per hour 60 days after enactment of law (2007),
2. \$6.55 per hour 12 months after enactment of law (2008),
3. \$7.25 per hour 24 months after enactment of law (2009),

Data on the distribution of low-wage workers in South Dakota in 2005, based on the *Occupational Employment Survey*, was supplied by the Labor Market Information Center of the South Dakota Department of Labor. This data is presented in Table 1 for nonfarm wage and salary workers in South Dakota. All wages included tips. As shown in Table 1, if the minimum wage were raised to \$5.85 per hour this would affect slightly less than⁴ 11,905 workers, or about

² *Ibid.*

³ *Ibid.*

⁴ The number is "slightly less than" 11,905 because some of these workers already earn precisely \$5.85 per hour, and those who earn precisely this amount will not be affected by a minimum wage set at \$5.85. The same principle applies to other possible minimum wage levels.

3.2 percent of all nonfarm wage and salary workers in South Dakota. If the minimum wage were raised to \$6.55 per hour this would affect a little less than 26,977 workers, or 7.2 per cent of workers. At \$7.25 per hour, a little less than 46,843 workers or 12.5 percent would be affected. These estimates reflect 2005 data on wages and employment. In projecting the impact of the minimum wage, we project wages and employment to the year of enactment.

Farm workers are not included in this survey. In 2005, there were 4,487 hired farm workers in South Dakota. The median wage for farmworkers and laborers (crop, nursery, and greenhouse) was \$9.11 per hour and the median wage for farmworkers (farm and ranch animals) was \$9.98 per hour in 2005. Undoubtedly, there are some workers below the minimum wage phase-in brackets but it appears to be a relatively small number.⁵

TABLE 1: NUMBER OF SD NONFARM WORKERS AT DIFFERENT WAGE RATES, 2005

	Number of Workers	% of Total
Wage		
\$5.15 or less	61	0.0%
\$5.25 or less	690	0.2%
\$5.35 or less	1,814	0.5%
\$5.45 or less	3,466	0.9%
\$5.55 or less	5,446	1.5%
\$5.65 or less	7,599	2.0%
\$5.75 or less	9,752	2.6%
\$5.85 or less	11,905	3.2%
\$5.95 or less	14,058	3.8%
\$6.05 or less	16,211	4.3%
\$6.15 or less	18,365	4.9%
\$6.25 or less	20,517	5.5%
\$6.35 or less	22,671	6.1%
\$6.45 or less	24,824	6.6%
\$6.55 or less	26,977	7.2%
\$6.65 or less	29,130	7.8%

⁵ For the farmworkers (farm and ranch animals) category the 2006 wage for workers in the 10th percentile was \$7.62 per hour. By 2009, when the \$7.25 wage rate would be in force very few workers in this category would be affected. This is based on the *Occupational Wage Estimates* report prepared by the South Dakota Department of Labor.

\$6.75 or less	31,283	8.4%
\$6.85 or less	33,886	9.1%
\$6.95 or less	36,826	9.9%
\$7.05 or less	40,001	10.7%
\$7.15 or less	43,382	11.6%
\$7.25 or less	46,843	12.5%

Source: *Occupational Employment Statistics*, Labor Market Information Center, South Dakota Department of Labor. January 2007.

The geographic distribution of low-wage workers in South Dakota is presented in Table 2.⁶ As shown in Table 2, the greatest concentration of low-wage workers (on a percentage basis) are in Day, Fall River, Jackson, Jones, and Tripp counties with more than 30 percent of the workers earning \$7.25 per hour or less. Other counties with a high concentration of low-wage workers are Aurora, Clark, Gregory, Lyman, McCook, and Stanley counties. Detailed wage data are not available for Mellette, Sully or Ziebach counties.

TABLE 2: LOW-WAGE WORKERS AS PERCENT OF EMPLOYMENT, 2005

Area Name	Total	Earning \$5.85 or less per hour	Earning \$6.55 or less per hour	Earning \$7.25 or less per hour
South Dakota Statewide	373,500	3.2%	7.2%	12.5%
Rapid City, MSA	57,991	3.7%	8.2%	13.8%
Sioux Falls, MSA	124,463	2.2%	5.0%	9.1%
Central Area	31,626	3.8%	9.0%	16.3%
East Area	125,591	3.5%	7.9%	13.5%
West Area	33,829	4.3%	9.7%	16.0%
Aurora County	830	8.7%	18.4%	26.0%
Beadle County	9,043	4.5%	10.1%	16.2%
Bennett County	1,253	0.2%	0.5%	3.1%
Bon Homme County	2,442	1.5%	3.7%	6.6%
Brookings County	15,270	3.8%	8.8%	14.4%
Brown County	19,483	3.2%	7.4%	12.8%
Brule County	5,056	2.3%	5.1%	10.1%
Buffalo County	335	3.9%	7.8%	12.5%

⁶ The actual number of workers in each wage category is presented in Appendix A.

Butte County	2,889	4.2%	9.7%	17.4%
Campbell County	197	2.5%	5.1%	13.2%
Charles Mix County	3,611	3.6%	8.6%	15.8%
Clark County	828	8.2%	17.6%	28.5%
Clay County	5,417	4.4%	9.1%	15.9%
Codington County	14,735	2.8%	6.4%	11.8%
Corson County	416	3.4%	7.2%	13.5%
Custer County	1,972	2.3%	5.3%	11.3%
Davison County	10,898	2.8%	6.2%	12.2%
Day County	2,279	9.6%	21.1%	30.5%
Deuel County	2,024	3.8%	8.6%	15.0%
Dewey County	2,073	2.6%	5.4%	8.5%
Douglas County	666	2.4%	5.9%	13.2%
Edmunds County	734	1.1%	2.3%	9.3%
Fall River County	2,367	9.9%	22.7%	33.9%
Faulk County	679	1.8%	3.5%	8.1%
Grant County	3,238	2.5%	5.7%	10.7%
Gregory County	1,605	5.9%	13.5%	22.4%
Haakon County	1,335	1.9%	4.8%	8.3%
Hamlin County	1,508	4.1%	9.9%	16.9%
Hand County	1,033	1.5%	3.8%	8.8%
Hanson County	297	4.7%	12.1%	18.2%
Harding County	278	2.5%	5.4%	10.1%
Hughes County	6,718	3.7%	9.3%	16.5%
Hutchinson County	2,128	5.3%	11.7%	17.0%
Hyde County	660	5.0%	10.2%	13.3%
Jackson County	1,380	10.7%	22.0%	32.5%
Jerauld County	1,562	0.4%	0.8%	4.2%
Jones County	260	7.7%	20.8%	33.8%
Kingsbury County	1,643	2.3%	5.4%	12.5%
Lake County	5,170	3.8%	8.2%	13.1%
Lawrence County	9,819	4.9%	11.4%	18.8%
Lincoln County	6,267	0.9%	2.1%	5.7%
Lyman County	1,352	5.4%	13.3%	22.0%
McCook County	1,387	7.9%	16.8%	22.5%
McPherson County	452	2.2%	4.9%	18.1%
Marshall County	1,402	3.9%	8.4%	14.7%
Meade County	5,680	3.7%	7.9%	12.0%
Mellette County	n/a	n/a	n/a	n/a
Miner County	937	0.1%	0.2%	4.5%
Minnehaha County	115,664	2.2%	5.0%	9.0%
Moody County	1,592	1.7%	4.0%	9.2%
Pennington County	52,429	3.7%	8.2%	13.9%
Perkins County	1,383	3.2%	7.0%	13.7%
Potter County	889	2.8%	6.2%	15.1%
Roberts County	3,646	4.2%	9.2%	15.0%
Sanborn County	1,201	0.6%	1.6%	8.0%

Shannon County	3,374	1.2%	2.7%	5.7%
Spink County	1,410	1.8%	3.9%	12.0%
Stanley County	1,066	6.3%	14.6%	21.2%
Sully County	n/a	n/a	n/a	n/a
Todd County	3,524	3.9%	8.6%	13.6%
Tripp County	2,889	8.7%	20.8%	32.8%
Turner County	1,397	3.1%	6.7%	12.0%
Union County	6,944	2.2%	5.1%	8.4%
Walworth County	2,174	3.8%	8.8%	18.3%
Yankton County	12,310	4.3%	9.3%	14.8%
Ziebach County	n/a	n/a	n/a	n/a

Source: Labor Market Information Center, South Dakota Department of Labor. January 2007.

The distribution of low-wage workers by industry in South Dakota is presented in Table 3.⁷ As expected, the industry that had the highest percentage of low-wage workers was the food service and drinking places subsector at 59 percent of workers earning \$7.25 per hour or less including tips. Other industries with a high percent of low-wage workers were the accommodation and food services sector and the food and beverage stores subsector. The industries with the lowest percent of low-wage industries were Federal and state government, utilities, and natural resources and mining.

TABLE 3: LOW-WAGE WORKERS BY INDUSTRY AS PERCENT OF EMPLOYMENT, 2005

Division	Title	NAICS	Estimated % of Workers			
			Total	Earning \$5.85 or less per hour	Earning \$6.55 or less per hour	Earning \$7.25 or less per hour
Supersector	Total	0000	373,500	3.2%	7.2%	12.5%
Supersector	Natural Resources & Mining	1011	1,209	0.2%	0.5%	1.1%
Supersector	Construction	1012	21,259	0.1%	0.2%	1.6%
Supersector	Manufacturing	1013	39,594	0.2%	0.4%	2.2%
Special	Durable Goods Manufacturing		26,780	0.1%	0.3%	1.7%
Special	Non-Durable Goods Manufacturing		12,814	0.4%	0.9%	3.1%
Supersector	Trade, Transportation & Utilities	1021	79,094	4.4%	10.0%	17.4%
Sector	Wholesale Trade	42	17,566	0.9%	2.2%	5.2%
Sector	Retail Trade	44-45	49,734	6.7%	15.0%	25.4%

⁷ The actual number is presented in Appendix A.

Subsector	Motor Vehicle & Parts Dealers	441	6,458	0.7%	1.5%	4.9%
Subsector	Food & Beverage Stores	445	8,552	12.4%	27.5%	41.7%
Subsector	General Merchandise Stores	452	9,745	7.4%	17.3%	29.4%
Sector	Utilities	221	2,107	0.0%	0.0%	0.4%
Sector	Transportation & Warehousing	48-49	9,687	0.2%	0.6%	2.1%
Supersector	Information	1022	6,663	2.9%	6.6%	10.5%
Supersector	Financial Activities	1023	27,695	0.6%	1.2%	3.7%
Sector	Finance & Insurance	52	24,046	0.2%	0.4%	2.4%
Sector	Real Estate & Rental & Leasing	53	3,649	3.0%	6.4%	12.2%
Supersector	Professional & Business Services	1024	24,089	1.1%	2.7%	7.4%
Supersector	Educational & Health Services	1025	52,775	1.2%	2.7%	6.3%
Sector	Educational Services	61	2,591	0.6%	1.4%	4.9%
Sector	Health Care & Social Assistance	62	50,184	1.2%	2.7%	6.3%
Subsector	Ambulatory Health Care Services	621	12,613	0.3%	0.5%	1.9%
Subsector	Hospitals	622	18,210	0.3%	0.7%	2.2%
Subsector	Nursing & Residential Care Facilities	623	12,957	1.6%	3.8%	9.9%
Supersector	Leisure & Hospitality	1026	40,845	15.1%	34.3%	50.9%
Sector	Arts, Entertainment, & Recreation	71	6,266	8.0%	18.3%	30.0%
Sector	Accommodation & Food Services	72	34,579	16.4%	37.2%	54.6%
Subsector	Accommodation	721	7,642	11.3%	24.4%	39.7%
Subsector	Food Services & Drinking Places	722	26,937	17.9%	40.8%	58.9%
Supersector	Other Services	1027	10,298	4.5%	10.0%	16.8%
Supersector	Government	1028	69,979	0.6%	1.5%	3.7%
Sector	Federal Government		10,643	0.0%	0.0%	0.1%
Sector	State Government		13,558	0.1%	0.3%	1.1%
Subsector	State Government Education	61	5,077	0.4%	0.8%	2.1%
Sector	Local Government		45,778	0.9%	2.1%	5.3%
Subsector	Local Government Education	61	25,572	0.6%	1.4%	4.3%

Source: Labor Market Information Center, South Dakota Department of Labor.
January, 2007.

ECONOMIC THEORY AND THE MINIMUM WAGE

Economic theory provides the intellectual foundation for thinking about wage rates, employment, and the influence of policy in labor markets. Following is a brief summary of some fundamental principles.

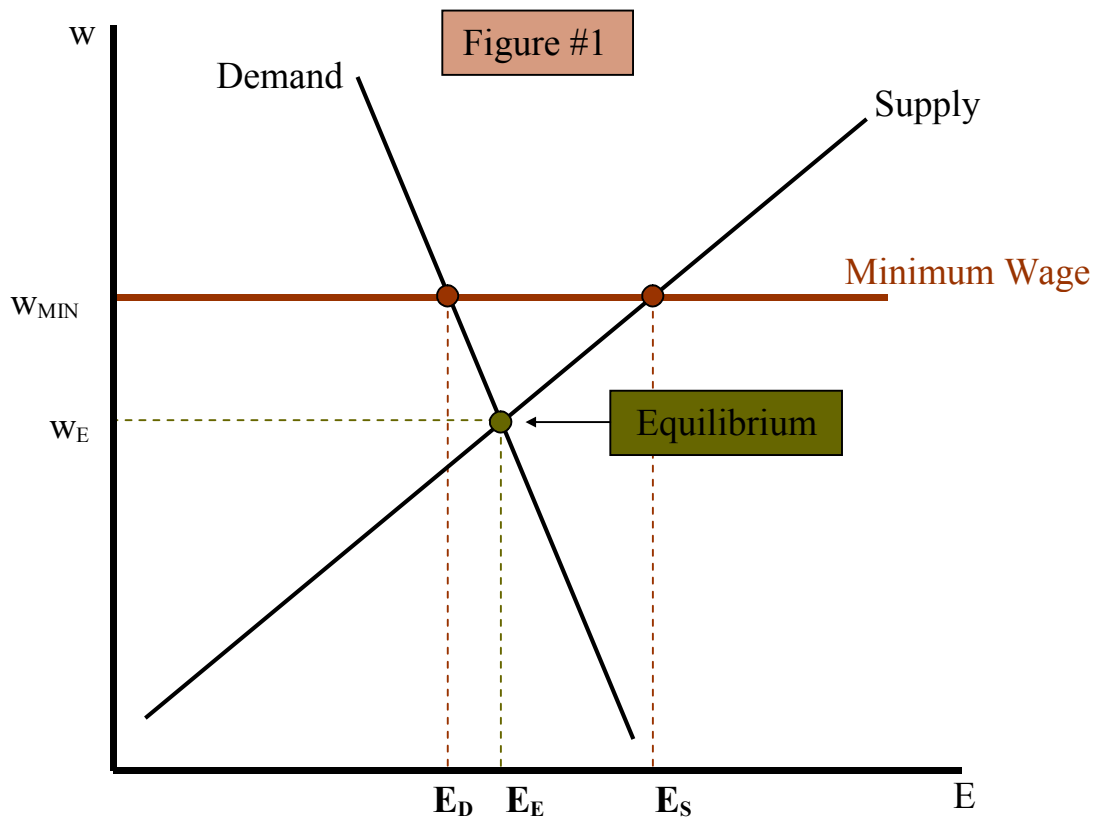
I. STANDARD MODEL

Wage rates are determined by the demand for and the supply of labor in competitive markets. The demand for labor *derives* from the demand for things which labor produces. Firms engage in the production process, hiring labor and other inputs to produce an output that is sold. Describing this process rigorously is essentially a mathematical exercise and it can be shown that if a firm faces a wage rate determined by the market, then the firm's demand for labor must slope down and to the right. Since the market demand for labor is the sum of the firms' demand for labor, market demand curves necessarily also have a negative slope. This reinforces the common sense notion that people wish to purchase more when the price is low than when price is high.

The supply of labor is derived from the tradeoff between leisure and the reward for giving up leisure, i.e., the wage rate. Theoretical requirements for a stable equilibrium in the labor market are met if a downward sloping demand curve is combined with an upward sloping supply curve. This standard model yields markets that are "well behaved" in the sense that they are stable and usually describe and predict well what the result of various public policies will be.

Figure 1 below illustrates the standard supply-demand model. In the absence of a minimum wage, the equilibrium wage is W_E and the quantity of labor hired is E_E . To illustrate how the market comes to this equilibrium, suppose that somehow the initial wage were W_{MIN} . Then the amount of labor demanded falls to E_D while the number of people who wish to work rises to E_S . There are now unemployed workers, as the quantity of labor supplied exceeds the quantity of labor demanded by $E_S - E_D$ at price W_{MIN} . The unemployed workers seeking jobs drives the wage back down to W_E .

If a legal minimum wage is established at W_{MIN} , then the mechanism that would bring the wage back down to W_E is not permitted to work, and the unemployment described above is



permanent⁸. The unemployment described above is usually not estimated because that requires knowledge of the supply curve. The reduction in employment relative to the original equilibrium, usually called “disemployment,” is measured instead, and amounts to $E_E - E_D$ in Figure 1⁹.

The imposition of a minimum wage operates as a tax on low skilled labor,¹⁰ and employers of low skilled labor will try to economize on this *now* more expensive resource. They may do this by substituting capital for low skilled workers, or substituting higher skilled workers for lower skilled ones. Or the employer may change the way it compensates workers, increasing the “wage” up to the new minimum but cutting back non-wage benefits. For example, medical or vacation benefits and leave time can be reduced or eliminated. Such things reduce the disemployment effect, but nonetheless represent real costs, some of which are borne by those people that we wish to help.

⁸ Of course, over time increased productivity increases the competitive wage and at some point the minimum wage is no longer binding. No unemployment results from a non-binding minimum wage.

⁹ This analysis ignores the fact that employers may keep employment the same, but reduce the number of hours employees work. There is a paucity of data on the magnitude of this effect.

¹⁰ While the analysis is the same as a tax, the proceeds of the “tax” go to the unskilled labor that remains employed.

It is not easy to identify where the unemployed are in the income distribution. And this can be important. If all the unemployed from an increase in the minimum wage were teenagers who lived in families with high incomes, then the level of concern is probably smaller than if the unemployed are the main breadwinners in families below the poverty level. On a national level, about one third of minimum wage workers are in families who have incomes at least three times that of the poverty level, and only one third are in families with incomes at or less than 1.5 times the poverty level.¹¹ Recent (2005) Census Bureau data show that the average family income in South Dakota of those who would gain from a hike in the minimum wage to \$7.25 per hour is \$44,868, and that only 9% of the potential gainers in South Dakota are sole earners in families with children.¹²

The above principles are derived through partial equilibrium analysis, by which we look only at markets affected directly by an increase in the minimum wage. Clearly, however, when prices and quantities in one market are affected, other markets can be affected too. For example, if firms directly affected by the minimum wage are minimizing cost at each level of output (as are all profit maximizing firms), then the minimum wage necessarily increases the cost of production and upward pressure is exerted on output prices. If output prices increase, the real wage is decreased, mitigating employment effects but reducing the real wage of the low-wage worker and hence also reducing their real income. Further, those whose wages are not increased by the new minimum wage are made worse off by the higher prices that they now must pay.

However, if employers are able to pass on the increased wage costs, societal costs of the minimum wage do not disappear. They are merely shifted to consumers. Hence, we believe our

¹¹ Richard Burkhauser, et al., "Who Gets What From Minimum Wage Hikes: A Re-Estimation of Card and Krueger's Distributional Analysis in Myth and Measurement: The New Economics of the Minimum Wage," *Industrial and Labor Relations Review*, April, 1996, 547-552.

¹² http://www.epionline.org/mw_statistics_state.cfm?state=SD

measure of the costs of the minimum wage is a good approximation even in the presence of general equilibrium effects.

In summary, then, standard economic theory predicts that employment is reduced as a result of the minimum wage. Such reduction in employment is the main source of economic costs resulting from increases in the minimum wage.

II. Challenges to the Standard Model

Economists are model builders, and over the last quarter century a host of models, most of which depart only slightly from the standard model, have been developed. Many of these models incorporate such things as search costs and other imperfections disallowed by the conventional model. Most challenges fit under the general rubrics of either the “monopsony” model, or some variant of the “efficiency wage” model. Each is briefly and simply described below.

a. Monopsony

A challenge to the standard model exists when there is a single buyer of labor. Coal mining towns in West Virginia in the early part of the last century are sometimes held up as an example. The key characteristic of this model is that the buyer affects the wage rate through how much labor he chooses to acquire. The buyer of labor is no longer a price-taker but has sufficient market power to affect the wage rate paid. The more labor the buyer wishes to have, the higher will be the wage rate the buyer must pay. This model does not deny the downward sloping demand curve for labor or the upward sloping supply, but the presence of a single buyer changes the outcome.

The wage paid in a monopsonistic industry will be below the competitive wage. Further, if a minimum wage a little higher than the current actual wage is imposed, then the firm will wish to hire more, not less labor. As the legal minimum wage is pushed ever higher, the amount of labor the firm wishes to hire also increases until the legal minimum reaches what the wage would have been if the market had been competitive. If the minimum wage is pushed above that which would have existed in a free competitive market, then even in the case of a monopsony employment starts to fall.

Monopsony models differ from the competitive model in that there is a range of increases in the legal minimum wage which result in increases, not decreases, in employment. Both the competitive and monopsonistic models agree, however, in predicting that raising the legal minimum wage above competitive levels results in reductions in employment relative to competitive employment levels.

b. Efficiency Wage Models

A second challenge to the standard model results from assuming that if a firm pays workers a higher wage than its competitors, then the behavior of the workers is improved and their productivity rises. Workers know they are getting a higher wage than they can get elsewhere, and so they will work hard to maintain their position. The increase in productivity on the part of the worker shifts the demand for labor on the part of the firm to the right, leading to the desire on the part of the firm to hire more labor.

Establishing a legal minimum wage can have similar effects, increasing labor productivity and hence increasing the demand for labor. If this is the case in reality, then increasing the minimum wage may not have the disemployment effects which result from the standard model, and could even result in increased employment.

There have been theoretical objections to this model, however. D. McCloskey, for example, observes that if labor becomes more efficient with a higher wage, then private firms have every incentive to pay the higher wage without the stimulus of a legal minimum wage. By doing so, the firm would increase its profits above what it would earn if it paid the lower wage.¹³

Another problem with the efficiency wage model is that while an individual firm paying higher than market wages may induce workers in that firm to work harder and thereby increase their productivity the same pressures are not at work when the wage increase is mandated and across the entire market. In this case, the worker has no incentive to stay in a particular job.

c. Ripple Effects

A question of some interest is the effect of the minimum wage on wages that are above the new minimum wage. The most widespread belief, based largely upon common sense, is that these wages will be increased as a result of increasing the minimum wage.

There is some theoretical truth to the common sense belief. Unskilled labor is a substitute for skilled labor. Increasing the minimum wage makes unskilled labor more expensive relative to skilled labor. This increases the demand for skilled labor and puts upward pressure on its wages. This is why unionized labor is usually in favor of increasing the minimum wage.

The empirical significance of any such ripple effects is very small, as ripple effects cannot be observed in national data. For example, if ripple effects were important we would expect to see an increase in the share of national income going to labor when the minimum wage increases. No such result has been observed. Even the impact of unionization on a national scale does not seem to be correlated with the share of the national income earned by labor. For these

¹³ Donald McCloskey, *The Applied Theory of Price*, 2nd ed. (McMillan, New York, 1985), p. 455.

reasons, calculations of the benefits and costs of increasing the minimum wage ignore ripple effects.

d. Conclusion

There are legitimate theoretical challenges to the standard model. Choice among these models cannot be made solely, or even primarily, on the basis of theoretical considerations. Only empirical evidence permits rational choice among the various models. An immense amount of empirical work has been done on this issue, and this is described in summary form in our empirical section.

EMPIRICAL EVIDENCE ON THE MINIMUM WAGE

There is a long line of research on the impact of the minimum wage on the employment of low-skilled workers. This research has generally found that an increase in the minimum wage has a small but statistically significant and economically important negative impact on employment. The extent of the adverse employment effect depends on the initial minimum wage relative to the market-clearing wage rate. If the minimum wage is below the equilibrium wage rate for that category of labor it is nonbinding and therefore has no employment effect. If the minimum wage is raised to a level that is above the market-clearing wage rate it is binding and will impact employment. The higher the new minimum wage rate, the greater the negative impact on employment. Obviously, a minimum wage rate of \$10.00 per hour would have a greater negative impact on employment than a minimum wage of \$7.25 per hour.

The groups most impacted by a rise in the minimum wage tend to be the young, least skilled, least-educated workers, and minorities. This is the case because the economic value of

their work to the employer is low so they are in danger of being priced out of the market by high minimum wages. Teenagers who tend to have low skills, little work experience, and limited education, tend to be the most affected by a rise in the minimum wage rate. Young minorities and non-high school graduates bear the brunt of job loss from increases in the minimum wage rate.

Until the 1990s, there was a strong consensus among economists that a high minimum wage had an adverse impact on employment.¹⁴ Consensus estimates place the wage elasticity of demand in a range of -0.1 to -0.3.¹⁵ This means a 10 percent increase in the minimum wage rate would reduce employment between one and three percent. However, in 1992 a series of articles were published by Card,¹⁶ Card and Krueger,¹⁷ and Card, Katz and Krueger¹⁸ that fundamentally challenged the conventional view of the impact of the minimum wage on employment. It was argued that a minimum wage increase had an insignificant or even a positive effect on employment. These conclusions by Card et al led to a large volume of research challenging the no-impact conclusion.

In a 1998 article, published in the *Journal of Economic Literature* by Fuchs, Krueger, and Poterba,¹⁹ a survey of labor and public finance economists at universities at the top-40 U.S. economics departments was taken concerning the consensus estimates of economic parameters.

¹⁴ Charles Brown, Curtis Gilroy, and Andrew Kohen, "The Effect of the Minimum Wage on Employment and Unemployment," *Journal of Economic Literature*, June 1982; Victor R. Fuchs, Alan B. Krueger, and James M. Poterba, "Economists' Views About Parameters, Values and Policies: Survey Results in Labor and Public Economics," *Journal of Economic Literature*, September 1998.

¹⁵ Charles Brown, "Minimum Wages: Are They Overrated?" *Journal of Economic Perspectives*, 1988.

¹⁶ David Card, "Using Regional Variation in Wages to Measure the Effects of the Federal Minimum Wage," *Industrial and Labor Relations Review*, 1992, 22-37; David Card, "Do Minimum Wages Increase Unemployment? A Case of California 1987-1989," *Industrial Relations Review*, 1992, 38-58.

¹⁷ David Card and Alan B. Krueger. *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton, NJ: Princeton University Press, 1995.

¹⁸ David Card, Lawrence F. Katz, and Alan B. Krueger. "Comment on David Neumark and William Wascher, "Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws,"" *Industrial Relations Review*, 1994, 487-96.

¹⁹ Victor R. Fuchs, Alan B. Krueger, and James M. Poterba, "Economists' Views About Parameters, Values and Policies: Survey Results in Labor and Public Economics," *Journal of Economic Literature*, September 1998.

On a question concerning the impact of a 10 percent increase in the minimum wage on teenage employment the median response was a one percent decline in teenage employment, while the mean response was a 2.1 percent decline. More recent research has continued to support the view that an increase in the minimum wage has a modest but statistically significant negative effect on employment. While debates like these may never be totally settled to everyone's satisfaction the subsequent research has arrived at a near-consensus conclusion that minimum wage increases do have a small but significant negative and economically important effect on employment.²⁰

After a careful review of this literature, this study concludes that the weight of evidence favors the proposition that an increase in the minimum wage will have a negative impact on employment. Our calculations are based upon a wage demand elasticity for labor of -0.2. This elasticity means that a ten percent increase in the minimum wage rate will reduce employment by two percent. This is midway between what is often considered the consensus impact of one to three percent.

²⁰ Donald Deere, Kevin M. Murphy, and Finis Welch. "Reexamining Methods of Estimating Minimum Wage Effects: Employment and the 1990-1991 Minimum Wage Hike," *American Economic Association Papers and Proceedings*, May, 1995, 232-237; John Abowd, Francis Kramarz, Thomas Lemieux, and David Margolis. "Minimum Wage and Youth Employment in France and the United States." In David G. Blanchflower and Richard Freeman (eds.) *Youth Employment and Unemployment in Advanced Countries*. Chicago: University of Chicago Press, 2000; Richard V. Burkhauser, , Kenneth A. Couch, and David C. Wittenberg. "Who Minimum Wage Increases Bite: An Analysis Using Monthly Data form the SIPP and CPS," *Southern Economic Journal*, 2000, 16-40; Richard V. Burkhauser, Kenneth A. Couch, and David C. Wittenberg. "A Reassessment of the New Economics of the Minimum Wage Literature with Monthly Data for the Current Population Survey," *Journal of Labor Economics*, October, 2000; David Neumark, and William Wascher. "Employment Effects of Minimum and Subminimum Wages: Reply to Card, Katz, and Krueger." *Industrial Relations Review*, 1994, 497-512; David Neumark and William Wascher. "Minimum Wage and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review*, 2000, 1362-96. David Neumark and William Wascher. "Using the EITC to Help Poor Families: New Evidence and a Comparison with the Minimum Wage," *National Tax Journal*, 2001; 281-317; Nicolas Williams and Jeffrey A. Mills, "The Minimum Wage and Teenage Employment: Evidence from Time Series," *Applied Economics*, 2001, 285-300; Stephen Bazen and Velayoudom Marimoutou, "Looking for a Needle in a Haystack? A Re-examination of the Time Series Relationship between Teenage Employment and Minimum Wages in the United States," *Oxford Bulletin of Economics and Statistics*, 2002, 699-725; Daniel Aaronson, and Eric French. "Product Market Evidence on the Employment Effects of the Minimum Wage," working paper, Federal Reserve Bank of Chicago, 2003; David Neumark and William Wascher. "Minimum Wage, Labor Market Institutions, and Youth Employment: A Cross-Sectional Analysis," *Industrial and Labor Relations*, 2004, 223-248.

THE WELFARE ECONOMICS OF THE MINIMUM WAGE

I. THE WELFARE ECONOMICS MODEL

Empirical evidence as described in a previous section supports the proposition that increasing the minimum wage will reduce employment. Of course, for this to occur the minimum wage must be binding, i.e., must be above wage rates that are currently being paid. This section lays out the principles that facilitate the measurement of the benefits and costs of the minimum wage to various segments of society.

However, before we illustrate the benefits and costs using the more formal graphical analysis we will discuss the benefits and costs of an increase in the minimum wage in plain words.

1. The workers who experience an increased wage as a result of the new minimum wage are better off than before. They benefit by the difference between the new minimum wage and their old lower wage rate.
2. The employers who pay these workers the new higher wage bear the cost. These employers are worse off as a result of the increase in the minimum wage. At this point, the gain by the workers is just equal to the loss to the employers. This is what is known as a zero-sum game.
3. Because the higher minimum wage will have some disemployment impacts, workers who lose jobs as a result of the new minimum wage rate are worse off. This is loss for which there is no offsetting gain.

4. The employers who would have profited by the employment of the now unemployed are worse off. Again, this is a loss for which there is no offsetting gain.
5. The losses to the workers and employers described in points 3 and 4 above are losses that are not offset by gains to anyone. These losses are what economists call a dead-weight loss or welfare loss to society. It is because of this loss, that an increase in the minimum wage imposes net costs on society. To repeat, the basic reason why there is a deadweight loss to society is the unemployment resulting from a higher minimum wage.
6. Depending on the competitive environment in output markets, firms that must pay higher wages because of the increase in the minimum wage may try to raise their prices as an effort to pass along their higher costs. If markets are competitive and there are some firms in the same industry that are not directly affected by the minimum wage increase, then the firms that are directly affected will have trouble raising prices.²¹ In our analysis, it is assumed that competition prevents firms from passing their higher costs onto the consumer.

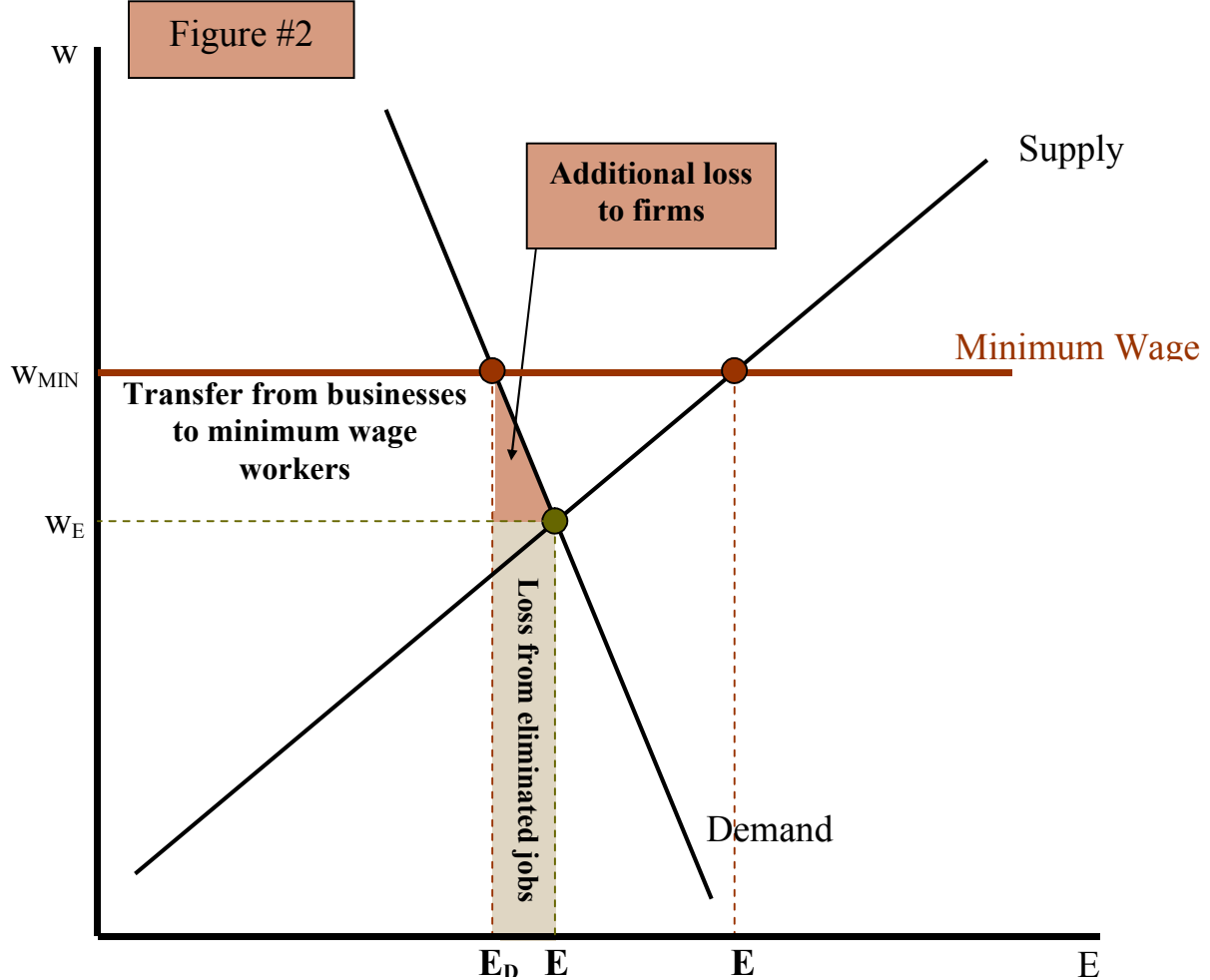
If all the competitors were equally affected by the minimum wage increase we would expect prices to rise in that industry. However, this would leave the consumer with less money to spend on other items which would reduce employment in these industries. Therefore, the impact on employment is similar

²¹ An example might be a chain fast food operation that uses the latest technology and capital which hires medium-wage workers competing with a mom-and-pop fast food operation using less sophisticated technology and capital which uses low-wage workers. An increase in the minimum wage may not affect the chain fast food operation because they pay workers above the new minimum wage while it could affect the mom-and-pop operation.

whether it is specific to a small number of industries that employ more low-wage workers or more evenly spread across the economy.

Moving to a more formal analysis of the measurement of benefits and costs of increasing the minimum wage in South Dakota, we turn to Figure 2, which illustrates supply and demand curves for labor of a given skill level. As the wage rate declines firms wish to hire more laborers, and fewer laborers wish to work. An equilibrium exists at wage rate W_E , where the quantity of labor hired is E . Employers and employees have all struck mutually acceptable bargains, and all those who wish to work at that wage rate are working,²² and all the firms' are hiring the quantity of labor they wish.

²² There are some normal frictions, e.g., it takes time to find a new job after leaving an old one, that prevent a “frictionless” equilibrium like that depicted above from always existing. The graph is a reasonable approximation.



If government imposes a legal minimum on wages, e.g., at W_{MIN} , then the number of workers hired falls to E_D and the number of workers who wish to work rises to E_S . The labeled areas in Figure 2 are helpful in identifying the gains and losses. Those workers who stay employed receive the higher wage, and their wage earnings are now higher by the area shaded in white and labeled “Transfers from businesses to minimum wage workers.” This gain has come at a cost to others, however. Employers formerly received this amount as a portion of the return to all non-labor factors of production. Hence this area merely represents a transfer to labor from other factors of production. There is no net gain or loss here. Further, there has been a reduction of total employment by $E - E_D$, and this disemployed labor is worse off by the light tan shaded area labeled “Loss from eliminated jobs.” The area in this rectangle below the supply curve is the value of lost leisure to disemployed workers. If this value is ignored, this area goes to zero. In addition, the disemployed would, had it remained employed, have

contributed the return to other factors in the amount of the rust colored triangle labeled “Additional loss to firms.”

There are no offsetting gains from the “Loss from eliminated jobs” and the “additional loss to firms,” so these areas are designated “deadweight loss” or sometimes “welfare loss” to society. This economic loss is a measure of the reduction in Gross State Product as a result of increasing the minimum wage.

The magnitude of the gains and losses depends upon the slopes of the demand and supply curves. If the demand curve were vertical, then the net losses disappear. Also, (if the demand curve is vertical) there are no net economic societal gains from imposing a minimum wage, as the gain to one group is entirely offset by the loss to another – the distribution of income has merely been rearranged with no increase or decrease in the magnitude of aggregate income.

II. THE EMPIRICAL RESULTS

In determining the benefits and costs of an increase in the minimum wage we analyze the increase in the minimum wage from \$5.15 to:

1. \$5.85 in 2007,
2. \$6.55 in 2008,
3. \$7.25 in 2009.

The data are those earlier described, and the assumptions used are:

1. elasticity of demand for labor is -0.20,
2. workers work 35 hours/week on average,
3. workers work fifty weeks per year on average,
4. on average the value of leisure for disemployed workers is zero.

The elasticity assumption of -0.2 is the mid-point of the consensus elasticity estimates of -0.1 to -0.3. We assign a value of zero to leisure time gained by the unemployed because current antipoverty policy is oriented toward getting people into, not out of, the workplace. Minimum wage jobs often provide a point of entry into the workplace, good work habits are learned, skills are gained, and people move on to higher paying jobs.

Table 4 below summarizes the effects in South Dakota of increasing the minimum wage. First, we look at the employment effects. If the minimum wage is increased from \$5.15 to \$5.85 in 2007, only the very low-wage earners are affected and the disemployment magnitude is correspondingly low, amounting to only about eleven workers. Those low-wage workers who experience a wage increase and *stay employed*, which number about 3,614, increase their earnings by about \$0.523 million. This increase in earnings is more than offset by the losses of over \$105 thousand to the unemployed, and the losses to the employer (who experiences increased costs) of over \$0.525 million. Low-wage workers, taken as a group, increase their labor earnings by almost \$0.418 million. The deadweight loss, i.e., that loss not offset by gains elsewhere, is a little over \$0.1 million. Also, every dollar gained by those who benefit from an increase in the minimum wage is paid for by \$1.21 that is lost by those who lose from the minimum wage increase.

Since the minimum wage is increased by increments at different points in time the distribution of wage earners by hourly earnings must be adjusted for changes in wages and for changes in the size of the work force that occur over time. The first adjustment, that of wage rate changes, is accomplished by increasing the lower and upper bounds of each wage interval by expected wage growth during the year of concern. For example, the lower bound of one wage interval in 2005 is \$5.66 and the upper bound is \$5.75. Wages are expected to grow by 3.6

percent in both 2006 and 2007. So in 2007 the lower bound of that interval will be $(\$5.66) \times (1.036) \times 1.036 = \6.07 , and the upper bound (of that interval) in 2007 will be $(\$5.75) \times (1.036) \times (1.036) = \6.17 . Similar adjustments were made for 2008 and 2009 assuming wage increases of 3.6 percent per year.

The second adjustment, that of the growing labor force, is accomplished by scaling up the number of workers in each wage interval by the expected percentage growth in the labor force. For example, the wage interval between \$5.66 and \$5.75 in 2005 had 2,153 workers. The labor force grew 2.8 percent in 2006, and is expected to grow 1.4 percent in 2007. Hence in that wage interval (which is between \$6.07 and \$6.17 in 2007), there will be $(2,153) \times (1.028) \times (1.014) = 2,244$ workers in 2007. Similar adjustments were made for 2007 and 2008 assuming 1.4 percent increases for each of these years.

At the other extreme, if the minimum wage is increased from \$5.15 to \$7.25 in 2009, disemployment is 375 workers. Those workers who experience a wage increase and who stay employed, numbering 19,871, gain \$20.7 million, but this is more than offset by the sum of losses to the disemployed of over \$4.25 million, and the losses to the employers of \$21 million. The low-wage workers as a whole gain \$16.5 million. The deadweight loss is approximately \$4.5 million. Again every dollar gained by an increase in the minimum wage to \$7.25 is paid for by \$1.22 in cost to others.

TABLE 4: IMPACTS OF INCREASING THE MINIMUM WAGE IN SOUTH DAKOTA

	Increasing the Minimum Wage from \$5.15 to		
	\$5.85 in 2007	\$6.55 in 2008	\$7.25 in 2009
Effect			
Disemployment	11	130	375
Number of Workers who directly experience an Increase in wages	3,614	12,584	19,871
Increase in Earnings of Employed Low Wage Workers	\$523,145	\$6,843,309	\$20,762,078
Lost Earnings by Disemployed	\$105,393	\$1,389,335	\$4,253,068
Total Change in Earnings of Low Wage Workers	\$417,752	\$5,453,974	\$16,509,009
Losses to Employers	\$525,056	\$6,894,992	\$21,013,710
Net Loss (Deadweight Loss)	\$107,304	\$1,441,018	\$4,504,701
Loss per Dollar Gained	1.21	1.21	1.22

SUMMARY AND CONCLUSIONS

This study has examined the impact of raising the minimum wage rate in South Dakota to follow the anticipated increase in the Federal minimum wage rate currently in Congress. This minimum wage bill would increase the wage from the current minimum wage of \$5.15 per hour to \$7.25 per hour in three seventy cent increments. The first increase would be to \$5.85 per hour within 60 days of the enactment of the bill (2007), to \$6.55 per hour one year later (2008), and to \$7.25 per hour one year later (2009).

Based on standard economic theory, the analysis determined the impact in terms

of the benefits and costs of an increase in the minimum wage rate. Job losses depend on the level of the minimum wage rate and range from eleven to 375 jobs lost. The benefits to the low-wage workers who realize a pay raise range from about a half million dollars for a minimum wage increase from \$5.15 per hour to \$5.85 per hour to almost \$21 million for an increase to \$7.25 per hour. The lost wages for the low-wage workers who lose their jobs range from \$0.10 million to \$4.25 million. The employer losses range from about a half million to over \$21 million. Finally, the net loss, or what economists call deadweight loss, ranges from \$0.10 million for the minimum wage increase to \$5.85 per hour to \$4.5 million for a minimum wage increase to \$7.25 per hour. This net loss occurs because of the disemployment effects of the minimum wage increase. As further indicated, the loss is about \$1.22 per dollar gained. What this suggests is that increases in the minimum wage are an inefficient way of assisting low-wage workers.

So what are we to conclude from this analysis? We will try to answer this question by posing a series of questions with answers based on our study.

Question: Does an increase in the minimum wage benefit low-wage workers?

Answer: Yes. It raises the income for many low-wage workers. We estimate that the increase in the minimum wage from \$5.15 to \$5.85 per hour would increase wages for 3,614 workers. The increase in the minimum wage to \$6.55 per hour would increase wages for 12,584 workers and the increase to \$7.25 per hour would increase wages for 19,871 workers.

Question: Do some employers lose as result of the minimum wage increase?

Answer: Yes. Those employers lose who have to pay higher wages to the workers who retain their jobs. The gains to workers who retain their jobs are fully offset by the losses suffered by the employers. At this point, there is no change in societal welfare unless we weigh the dollar gains to workers differently than the dollar losses to the employers.

Question: Do some workers lose as a result of an increase in the minimum wage?

Answer: Yes. The workers who find themselves without a job are worse off. Our estimates indicate that at a minimum wage of \$5.85 per hour 11 jobs will be lost. At \$6.55 the loss of jobs is estimated at 130 and at \$7.25 per hour the job loss is estimated to be 375. This is a loss for which there are no offsetting gains and therefore a net loss to society.

Question: Do some employers lose as a result of employing fewer workers than before the increase?

Answer: Yes. Those employers employing fewer workers lose some profits due to the higher wage. We have to remember that employers hire workers because they provide greater value to their employer than their cost. If the wage paid to a worker is higher without a corresponding increase in productivity, the profit to the employer is lower.

Question: Overall, are workers better off as a result of the minimum wage increase?

Answer: Yes. The gains in income from the workers who retain their jobs are greater than the losses suffered by workers who lost their jobs. We estimate that at \$7.25 per hour 19,871 workers gain while 375 workers lose their jobs. Because of the inelastic nature of the demand for labor, the total gains to the workers who maintain their job at the higher wage is greater than the losses suffered by those workers who lose their jobs. The gains received by those workers who get a pay raise is \$20.7 million compared to the losses of those workers who lose their jobs of \$4.3 million

Question: Overall, are employers worse off as a result of the minimum wage increase?

Answer: Yes. They must pay higher wages than before and lose the profits they would have earned on the marginal workers who are now unemployed. The loss suffered by the employers is \$21.0 million.

Question: Is society better off as a result of a higher minimum wage?

Answer: No. Society is worse off if the well-being of society is measured by society's income. Increasing the minimum wage reduces total societal income as a result of the job losses suffered by some workers and the lost profits to employers who would have profitably employed them.

Question: So given the costs and benefits is raising the minimum wage a good or bad policy?

Answer: Like all policy issues it is a matter of trade-offs. There are benefits and there are costs. Different people may evaluate the costs and benefits differently. If a dollar gained by a low wage worker is valued more highly by the policy maker than is a dollar lost by the employer and the unemployed, then the increase in the minimum wage could raise societal welfare.

To illustrate, our estimates indicate that every dollar gained by someone costs someone else \$1.20. If the policy maker believes the \$1.00 to the gainer means more than the \$1.20 means to those who lose, then raising the minimum wage is a good policy. In less precise language the argument may be stated, "So a few people lose their jobs and employers have to pay higher wages, the gains to the large number of low-wage workers in worth the cost."

Alternatively, if the policy maker is unwilling to assert that one dollar "means" more to one group than to another, then there is a societal welfare loss associated with an increase in the minimum wage.

APPENDIX A

TABLE 1A: NUMBER OF LOW-WAGE WORKERS BY COUNTY, 2005

Area Name	Estimated Number of Workers			
	Total	Earning \$5.85 or less per hour	Earning \$6.55 or less per hour	Earning \$7.25 or less per hour
South Dakota Statewide	373,500	11,905	26,977	46,843
Rapid City, MSA	57,991	2,130	4,740	7,984
Sioux Falls, MSA	124,463	2,711	6,192	11,302
Central Area	31,626	1,209	2,846	5,157
East Area	125,591	4,414	9,931	16,978
West Area	33,829	1,441	3,268	5,422
Aurora County	830	72	153	216
Beadle County	9,043	405	909	1,463
Bennett County	1,253	3	6	39
Bon Homme County	2,442	37	90	161
Brookings County	15,270	580	1,343	2,206
Brown County	19,483	628	1,449	2,486
Brule County	5,056	115	259	513
Buffalo County	335	13	26	42
Butte County	2,889	122	279	504
Campbell County	197	5	10	26
Charles Mix County	3,611	130	310	571
Clark County	828	68	146	236
Clay County	5,417	237	495	859
Codington County	14,735	410	942	1,736
Corson County	416	14	30	56
Custer County	1,972	46	104	223
Davison County	10,898	303	677	1,335
Day County	2,279	218	482	696
Deuel County	2,024	76	175	304
Dewey County	2,073	54	112	177
Douglas County	666	16	39	88
Edmunds County	734	8	17	68
Fall River County	2,367	234	538	803
Faulk County	679	12	24	55
Grant County	3,238	82	184	345
Gregory County	1,605	94	217	359
Haakon County	1,335	25	64	111
Hamlin County	1,508	62	150	255
Hand County	1,033	15	39	91
Hanson County	297	14	36	54

Harding County	278	7	15	28
Hughes County	6,718	248	622	1,106
Hutchinson County	2,128	113	248	362
Hyde County	660	33	67	88
Jackson County	1,380	148	303	448
Jerauld County	1,562	6	13	65
Jones County	260	20	54	88
Kingsbury County	1,643	38	88	205
Lake County	5,170	199	424	677
Lawrence County	9,819	478	1,118	1,846
Lincoln County	6,267	57	132	360
Lyman County	1,352	73	180	298
McCook County	1,387	109	233	312
McPherson County	452	10	22	82
Marshall County	1,402	54	118	206
Meade County	5,680	211	449	681
Mellette County	n/a	n/a	n/a	n/a
Miner County	937	1	2	42
Minnehaha County	115,664	2,501	5,734	10,464
Moody County	1,592	27	64	147
Pennington County	52,429	1,919	4,292	7,307
Perkins County	1,383	44	97	190
Potter County	889	25	55	134
Roberts County	3,646	153	336	548
Sanborn County	1,201	7	19	96
Shannon County	3,374	40	90	193
Spink County	1,410	25	55	169
Stanley County	1,066	67	156	226
Sully County	n/a	n/a	n/a	n/a
Todd County	3,524	138	303	480
Tripp County	2,889	252	600	949
Turner County	1,397	43	94	167
Union County	6,944	154	354	585
Walworth County	2,174	82	192	398
Yankton County	12,310	525	1,143	1,818
Ziebach County	n/a	n/a	n/a	n/a

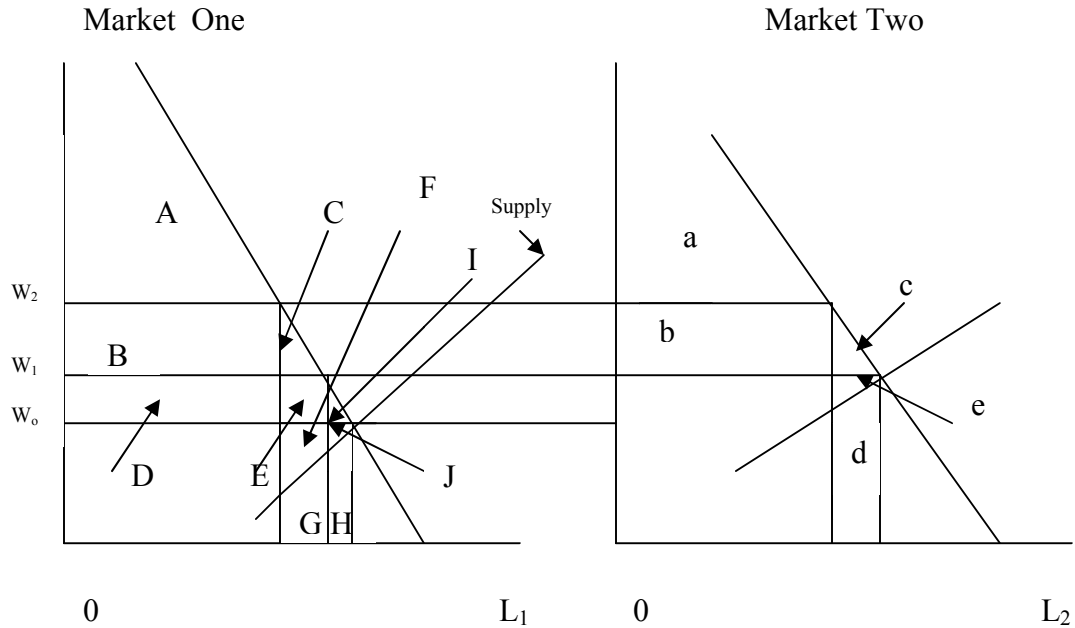
Source: Labor Market Information Center, South Dakota Department of Labor.
January 2007.

TABLE 2A: NUMBER OF LOW-WAGE WORKERS BY INDUSTRY IN SOUTH DAKOTA, 2005

Title	NAICS	Estimated Number of Workers			
		Total	Earning \$5.85 or less per hour	Earning \$6.55 or less per hour	Earning \$7.25 or less per hour
Total	0000	373,500	11,905	26,977	46,843
Natural Resources & Mining	1011	1,209	3	6	13
Construction	1012	21,259	15	36	335
Manufacturing	1013	39,594	76	178	863
Durable Goods Manufacturing		26,780	29	68	464
Non-Durable Goods Manufacturing		12,814	47	110	399
Trade, Transportation & Utilities	1021	79,094	3,501	7,879	13,740
Wholesale Trade	42	17,566	166	378	908
Retail Trade	44-45	49,734	3,312	7,443	12,618
Motor Vehicle & Parts Dealers	441	6,458	47	100	319
Food & Beverage Stores	445	8,552	1,059	2,353	3,563
General Merchandise Stores	452	9,745	725	1,685	2,869
Utilities	221	2,107	0	0	8
Transportation & Warehousing	48-49	9,687	23	58	206
Information	1022	6,663	195	437	701
Financial Activities	1023	27,695	153	335	1,019
Finance & Insurance	52	24,046	44	100	574
Real Estate & Rental & Leasing	53	3,649	109	235	445
Professional & Business Services	1024	24,089	274	641	1,784
Educational & Health Services	1025	52,775	610	1,403	3,308
Educational Services	61	2,591	16	36	127
Health Care & Social Assistance	62	50,184	594	1,367	3,181
Ambulatory Health Care Services	621	12,613	32	69	243
Hospitals	622	18,210	53	125	394
Nursing & Residential Care Facilities	623	12,957	204	495	1,287
Leisure & Hospitality	1026	40,845	6,177	14,004	20,775
Arts, Entertainment, & Recreation	71	6,266	503	1,149	1,882
Accommodation & Food Services	72	34,579	5,674	12,855	18,893
Accommodation	721	7,642	865	1,865	3,034
Food Services & Drinking Places	722	26,937	4,809	10,990	15,859
Other Services	1027	10,298	464	1,033	1,725
Government	1028	69,979	437	1,025	2,580
Federal Government		10,643	0	0	8
State Government		13,558	20	43	146
State Government Education	61	5,077	20	43	106
Local Government		45,778	417	982	2,426
Local Government Education	61	25,572	146	361	1,094

Source: Labor Market Information Center, South Dakota Department of Labor, January 2007

APPENDIX B



Let wage W_0 in Market One be \$5.15 and the wage rate in Market Two be \$5.25. Assume the minimum wage rate is increased from \$5.15 to \$5.25 = W_1 . Only workers in Market One are affected. Losses to disemployed workers in Market One are areas $H + J$ (if leisure is not valued). The gain to workers in Market One who keep their jobs is $D + E$. The losses to employers is area $D + E + I$. Net welfare loss, or the deadweight loss is $H + J + I$.

Now suppose the minimum wage were increased from \$5.15 to \$5.35 = W_2 . Now workers in both Market One and Market Two are affected. In Market One the gain to workers who stay employed is now $B + D$. The loss to employers is $B + D + C + E + I$, and the loss to the disemployed is $F + G + H + J$. The dead weight loss to society in Market One is $G + H + F + J + E + I + C$. In Market Two the gain to workers who stay employed is area b . The loss to

employers is $b + c$. The loss to the unemployed is $e + d$, and the deadweight loss is $c + d + e$.

The net loss to society as a whole from raising the minimum wage to W_2 is the sum of the areas described in the two markets. This amounts to $c + d + e + G + H + F + J + E + I + C$.